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# ***‘THE TOWN IS SURROUNDED:’ FROM CLIMATE CONCERNS TO LIFE UNDER WIND TURBINES IN LA VENTOSA, MEXICO***

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## **Abstract**

The Isthmus of Tehuantepec region of southwest Oaxaca, Mexico, known locally as the *Istmo*, was identified in 2003 as a prime site for wind energy development. Supported by climate change mitigation legislation, a ‘wind rush’ engulfed the Istmo. Now, La Ventosa sits surrounded by high-tension wires and wind turbines, some only 280 meters from homes. This paper argues that new valuations of wind resources based on market mechanisms and anthropogenic climate change laws are intensifying the destructive trajectory of the industrial economy. There are benefits for land owners and political authorities, and what amounts to token civil works projects for the town. But the majority of people interviewed expressed dissatisfaction towards the existence of wind parks surrounding the town. Instead of collective benefits, the wind parks brought different degrees of health concerns, enormous increases in land, rent, food, and electricity prices, as well as insecurity. The findings here demonstrate that wind energy development, encouraged by climate change mitigation policies, is intensifying pre-existing trends towards inequality and poverty in La Ventosa. Meanwhile, the destructive operations of the global industrial

economy are renewed, using market-based approaches to mitigating anthropogenic climate change.

**Key Words:** La Ventosa; Wind Energy; Sustainable Development; Land Control; Climate Change; Green Grabbing

**‘El pueblo está rodeado.’ De preocupaciones climáticas a la vida bajo turbinas eólicas en La Ventosa, México**

## **Resumen**

El Istmo de la región de Tehuantepec en el sudoeste de Oaxaca, México, conocido localmente como el Istmo, fue identificado en 2003 como un sitio ideal para el desarrollo de la energía eólica. Con el apoyo de la legislación para la mitigación del cambio climático, una “ráfaga de viento” envolvió el Istmo. Ahora, La Ventosa se encuentra rodeada de cables de alta tensión y turbinas eólicas, algunas a sólo 280 metros de los hogares. Este artículo argumenta que las nuevas valoraciones de recursos eólicos basadas en mecanismos de mercado y leyes antropogénicas sobre el cambio climático están intensificando la trayectoria destructiva de la economía industrial. Hay beneficios para

los propietarios de tierras y las autoridades políticas, además de lo que equivale a proyectos de obras civiles simbólicas para la ciudad. Pero la mayoría de las personas entrevistadas expresaron su descontento por la existencia de parques eólicos que rodean la ciudad. En lugar de beneficios colectivos, los parques eólicos trajeron diferentes grados de preocupaciones de salud, aumentos enormes en los precios de la tierra, del alquiler, de los alimentos y de la electricidad, así como la inseguridad. Los hallazgos aquí demuestran que el desarrollo de la energía eólica, alentado por las políticas de mitigación del cambio climático, está intensificando las tendencias preexistentes hacia la desigualdad y la pobreza en La Ventosa. Mientras tanto, se renuevan las operaciones destructivas de la economía industrial mundial, utilizando enfoques basados en el mercado para mitigar el cambio climático antropogénico.

**Palabras clave:** La Ventosa; Energía eólica; Desarrollo sostenible; Control de la tierra; Cambio climático; Agarre verde

*'Not everything that shines is gold'* Etelvina Valdivieso

Situated on an arid plain, marked by scattered hills, and clumps of vegetation, La Ventosa is a small town in the Isthmus of Tehuantepec region of Oaxaca, Mexico, known locally as the *Istmo* (Figure 1). With a population of just over 4,000, La Ventosa translates as 'the windy place.' It sits where the Sierra Madre mountain range tapers and atmospheric pressure differentials between the Gulf of Mexico and the Pacific Ocean allow a powerful north wind to blow through the region. In 2003, a USAID-sponsored report, *Wind Energy Resource Atlas of Oaxaca*, mapped and confirmed this 'excellent wind resource' (Elliott, *et al.*, 2003: iv), leading the International Finance Corporation (IFC, 2014: 1) to exclaim that the region has 'the best wind resources on earth.' The Istmo would soon experience a 'wind rush' (Vance, 2012), and by January 2015 would have 1,608 wind turbines (Rivas, 2015). La Ventosa was the second town to be consumed by industrial-scale wind turbines after La Venta, which hosted the first wind pilot project in 1994, followed by a Clean Development Mechanism (CDM)-sponsored wind park, La Venta II, in 2007.

Eventually La Ventosa would be engulfed by wind turbines and electrical infrastructure that would enclose roughly 80-95 per cent of the town.

Political ecologists have shown how development projects that disregard local concerns and power dynamics can create ecological distribution conflicts (Martínez-Alier, 2002). These arise from local power inequalities, unequal distribution of benefits and negative environmental impacts. Maarten Wolsink (2000) among others (Devine-Wright, 2005; Pasqualetti, 2011; Oceransky, 2011) demonstrated the importance of local stakeholder participation and how top-down approaches invite resistance to wind energy development. Similarly, Christos Zografos and Joan Martínez-Alier (2009) document a 'centre-periphery' dynamic with wind park construction in Catalonia. Outside wind developers profited from expropriating access to land and wind resources at a cheap price. Meanwhile local people are left feeling ripped off, excluded and stuck with the environmental changes brought by the wind project. In general, people living around wind energy sites are faced with carrying the costs of the developers ambitions (Pasqualetti, 2011), which can be compounded by ecosystem disruption, unequal benefit sharing, political corruption and export-oriented development models (Martínez-Alier, 2002; Zografos and Martínez-Alier, 2009). Furthermore, Bakker and colleagues (2012: 48) write: 'People who live close to wind turbines and do not benefit economically, will be at risk to experience sleep disturbance and psychological distress.' The way land deals and development projects—wind or otherwise—are constructed have significant psycho-political and geographical effects on populations, which can create social conflict, long-term resentment or even social immiseration.

Ecological distribution conflicts are intimately tied up with the notion of green grabbing. Emerging from new valuations of natural resources that are legitimizing and incentivizing new resource appropriations, green grabbing involves transfers of the control of land and/or natural resources to powerful actors by various means using an environmental ethic or rational (Fairhead *et al.*, 2012: 254). Land and resource transfers involve various forms of

international, national and local level collaboration, utilizing a diversity of coercive and/or deceptive tactics to achieve resource control (Borras *et al.*, 2012; Wolford *et al.*, 2013; Holmes, 2014). Green grabbing represents the proliferation of ecological distribution conflicts arising from new economic valuations of natural resources. These are actively ‘rolling out’ new policy by various national and international actors to sustain the growth of the industrial economy related to ecosystem and climate commodity markets (Dunlap and Fairhead, 2014). This paper argues that new valuations of wind resources based on market mechanisms and anthropogenic climate change laws are advancing and intensifying environmental and social pressures on rural populations. La Ventosa emerges as an interesting case of green grabbing illustrating, at a local level, the complications of wind energy centric land grabbing, while also at an international level, the dishonest and damaging ecological behaviour encouraged by climate change mitigation initiatives.

Providing some background on green economic policy in Mexico and the wind parks surrounding La Ventosa, this paper examines the arrival, the politics, and the social and ecological changes generated by wind energy development. Wind energy projects in the Istmo, it is argued, are advancing destructive political and economic trends in La Ventosa, which are symptomatic of larger international neoliberal and climate change policies. La Ventosa wind energy projects empower and entrench existing trends of political corruption, income-inequality and work-related out-migration while, at the international level, are legitimizing and intensifying the destructive profit oriented trajectory of the industrial economy, in the name of redressing climate and ecological crisis.

This paper emerges from a larger project investigating wind energy development in the region, based on participant observation and involving sixty-six recorded semi-structured interviews collected between 4 February and 4 May 2015 in La Ventosa. Interviews were conducted with people critical of wind energy

eager to discuss their experiences, in addition to walking door-to-door through the town asking if people would share their thoughts about the wind turbines. Research participant confidentiality, especially given the controversial issue of wind energy in the region, is particularly important. Research participants are referred to by genders, or as a broad identity descriptor—for example ‘land owner,’ ‘woman’ or by fake names. This research was conducted with an interpreter, who appears in the text as a ‘friend’ because during this research they became more than interpreter. The next section begins by providing policy and wind park background in La Ventosa, before moving into the arrival of the wind energy project and the subsequent issues that emerged during conversations and interviews.



*Fig 1 Isthmus of Tehuantepec. Adopted by author from University of Texas Libraries*

### From Structural Adjustment to Market Based Environmentalism

While Mexico has become well-known for its politically repressive and Dirty War style conditions in the country (AI, 2015; Paley, 2014, 2015), ironically, it is also amongst the countries adopting the most comprehensive anthropogenic climate change legislation. Repressive and progressive trends are both contained within economic liberalization programs in the country. Receiving thirteen structural adjustment loans from the World Bank in 1980-1991



(Paley, 2014), Mexico was faced with a barrage of neoliberal programs, that have continued and also intertwined with environmental legislation and wind energy development (UNEP, 2015). Three notable policies laid the foundation for the Oaxacan wind rush:

First was the revision of Article 27 of the Mexican Constitution in 1992 that created the possibility of privatizing social property—*ejidos* and communal land (Stephen, 2002: 62-7). *Ejidos* are lands designated for agricultural and residential use, governed by local assemblies, a *comisariado* (collective land commissioner) and made up of recognized community members,<sup>1</sup> while communal lands (*terrenos comunales*) are related to pre-colonial land claims and are governed by varying rules according to regional customs (Binford, 1985).

Second was the 1992 electricity law that contains a notion of ‘self-supply’ (*autoabastecimiento*) that allows companies to buy and manage their own energy generation sites. This has been criticized as a profitable ‘loophole’ for energy companies (WDM, 2011: 8).

Third was the notorious 1994 North American Free Trade Agreement (NAFTA) stating, in Section 6, that ‘an enterprise may acquire, establish, and/or operate an electrical generating facility in Mexico to meet the enterprise’s own supply needs’ (USAID, 2009: 2).

These policy changes opening up collective lands, privatizing energy generation and allowing it to go transnational, provided incentives for foreign direct investment (FDI)—green or otherwise—in Mexico. Recently, President Peña Nieto has taken this process further with the 2013 Petroleum and Federal Electric Utility Act. Despite militant opposition (Gonzalez, 2014), this legislation privatized the two largest public firms in Mexico, PEMEX and the Federal Electricity Commission (CFE), mandating that social property or other land holders must negotiate and eventually surrender their land to private energy companies. The results of this legislation are yet to be seen, but

researchers anticipate an increase in social conflict (Payan and Correa-Cabrera, 2014).

This trajectory of economic liberalization has diversified, extending to develop green economic policy and initiatives. Wind energy has become an important element in climate change legislation, with the United Nations calling to ‘accelerate the deployment of all renewable technologies including onshore and off-shore wind’ and developing ‘specific policies and business models to support them (e.g., feed-in tariffs and public auctions); and the removal of barriers to large-scale renewables’ (UN, 2012: 22). This has made the Istmo an important national asset for Mexico, which has become a leader in promoting a green economy and climate change legislation. This includes the Renewable Energy and Energetic Transition Law (2008), mandating that thirty-five per cent of electricity will come from renewable resources by 2020, forty per cent by 2040 and fifty per cent by 2050. This is also backed by the Special Climate Change Program (2009-2012) and the General Law on Climate Change (2012) which seeks to reduce emissions by thirty percent based on year 2000 emission levels by 2020 and fifty percent by 2050. This plan is known as the 10-20-40 vision, and according to Secretariat of Environment and Natural Resources (SEMARNAT, 2013: 9) seeks to turn

this great [climate change] challenge into an opportunity to conserve and sustainably use its natural capital; to take advantage of its vast potential to develop clean energies; to correct inefficiencies in the use of energy; to generate jobs within a green economy; to promote sustainable territorial development; to increase competitiveness, and to improve public health and quality of life.

Turning the problem into a solution, this country-wide trajectory to develop a green economy was solidified by the General Law of Climate Change (LGCC), which institutionally supports and mandates the expansion of renewable or ‘clean’ energy. According to the LGCC this will be accomplished by ‘an incentive-based system, which promotes and allows for profitable electricity generation through renewable

<sup>1</sup> That was traditionally all-male.

energy such as wind, sun, and small hydro' that seeks to meet Mexico's goal to generate 35 per cent of its electricity from clean sources by 2024 (LGCC, 2012: 65; SCCP, 2014). Such an 'incentive-based system' refers to market-based environmentalism which (Corson *et al.*, 2013), after the Kyoto Protocol (1997), became the principal approach to mitigating climate change and biodiversity loss (Dunlap and Fairhead, 2014). Mexico has been ambitious in creating a green economy and legislating climate change laws, which continue with The Special Climate Change Program 2014-2018. The Mexican government has become a leader in climate change legislation, and is aggressively working to establish a green economy, and incentivize investments in the area of renewable energy. However, the question remains: will these measures adequately mitigate, let alone address, the political and economic system responsible for driving and reproducing ecological crises and climate change? The case of La Ventosa provides an insightful example.

### **La Ventosa Wind Parks: The Green Economy, Investors and Energy Use**

Wind park planning in La Ventosa began in the late 1980s with the first commercial project completed in 2009. This was the Parques Ecológicos de México (80 Mega Watt (MW) built by the Spanish companies Iberdrola and Gamesa. This development continued in 2010 with the completion of two wind parks: the Bii Nee Stipa I-III ('El Retiro') (74 MW) by Gamesa and the La Mata and La Ventosa Wind Park (65.7 MW) by the Électricité de France (EDF). Three other parks were completed in 2012: Fuerza Eólica del Istmo 1a (30 MW) and 2a (50 MW) by General Electric Wind and the Stipa Naaya (74 MW) park by Gamesa (Mejía, 2014). In the Istmo, the wind turbines are typically tri-blade, sitting on 80 meter towers rooted in a concrete foundation 7-14 meters (23-45 ft.) deep and about 16-21 meters (52-68 ft.) in diameter.<sup>2</sup> The figures fluctuate outside these ranges depending on the project site. For example, in La Ventosa, wind turbine foundations are 11.5 meters deep, while the Barra de Santa Teresa in the southern coastal Istmo, which consist of

sand and vegetation, fishermen claim to have seen a foundation depth of 70 meters.<sup>3</sup>

The International Renewable Energy Agency (IRENA) estimates that a 20 MW wind farm costs a total of \$44.7 million (IRENA, 2015: 58). Construction costs are always negotiable and depend on the local political, economic and environmental contexts of project sites. The La Mata and La Ventosa wind park became the World Bank's leading Clean Technology Fund (CTF) in Mexico (WDM, 2011). CTF is the largest of the World Bank's Climate Investment Funds (CIFs) established by G8 donor countries, and designed to support low-carbon technologies and encourage 'clean' investments. The World Bank invests in other wind energy projects 30 minutes down the highway from la Ventosa, with the La Venta II (USD 12.9 million loan) and III (\$25 million grant) wind parks (WDM, 2011). The La Mata and La Ventosa project received loans from the CTF (USD 15 million concessional loan), the IFC (USD 23.68 million), the Inter-American Development Bank (IDB) (USD 21.01 million), and Export-Import Bank (\$80.667 million) with the project totaling \$151.84 million (WDM, 2011). This wind park was registered with the Clean Development Mechanism (CDM), which is projected to generate 1,179, 195 certified emissions reduction credits (CERs) over the next seven years and has been 'forward sold' to EDF Trading giving it the possibility to gain over USD 40 million from the CDM (CDM, 2006; WDM, 2011: 11). Despite problems with democratic participation and oversight with the CDM (Newell, 2014), it has helped reduced the risk to investors, realizing the profitability of wind energy generation and renewing the operations of transnational corporations.

The Mexican government created openings to establish a profitable renewable energy market in Mexico. This gained the attention of Danish (Vestas), Spanish (Iberdrola, Gamesa, Marña Revonables/Eólica del Sur) and United States (Clipper) wind companies, while also giving rise to a series of limited liability companies. In the case of La Mata and La Ventosa Wind Park, Eléctrica del Valle de México (EVM), owned by EDF Energies Nouvelles—the renewable

<sup>2</sup> There are also wind turbines north of La Ventosa there is a set of wind turbines with towers 150 meters (492 ft.) tall.

<sup>3</sup> Interview conducted in Álvaro Obregón, 11 May 2015.

energy arm of Électricité de France (EDF)—heard that Wal-Mart wanted to ‘go green,’ approached them, and later negotiated a 60 per cent power share of the wind park with electricity bought ‘at a price that is higher than wholesale, but lower than retail’ (WDM, 2011; USAID, 2009: 5). Notably, none of the energy generated from these parks surrounding La Ventosa are providing electricity to the region (WDM, 2011; Juárez-Hernández and León, 2014). Instead, based on the self-supply model, these wind parks are exporting electricity to other countries and investors companies. As early as 2009, the CFE had signed agreements to export electricity from the Istmo to Belize, Guatemala and California (USAID, 2009). In addition to Wal-Mart, investors in the surrounding wind parks included: Cemex (the world’s largest cement producer), Grupo Bimbo (the world’s largest food processing corporation), Grupo Mexico and Peñoles—two of Latin America’s largest mineral extraction and processing companies (Garcia, 2012). Not only does this energy generation relationship create an exploitive ‘centre’-‘periphery’ dynamic, as outlined by Zografos and Martínez-Alier (2009), but wind energy parks around La Ventosa are being used to intensify the consumption and production of natural resources.

This exploitative dynamic, combined with claims of climate change mitigation, sustainability and environmental ethics, emblematic of green grabbing, are legitimizing and incentivizing new wind resource appropriations and uses. Grupo Mexico, the largest mining company in Mexico, owns 37 turbines in phases II-III of Bii Nee Stipa wind park, proving ‘once again,’ in their words, their ‘commitment to sustainability and the environment’ (Grupo Mexico, 2014: 7; Hristova, 2014). Also celebrating their ‘commitment to sustainability and environmental stewardship,’ Peñoles (2014: 58) has two self-supply wind parks: Fuerza Eólica del Istmo 1a and 2a in La Ventosa, while it also has a gold mine concession of 10,039 hectares with Canadian River Resources Inc/Arcus Development Group (Chaca, 2015; Biller, 2012; RS, 2008) (Figure 2). Initially, Peñoles was a

principal sponsor in the recently denied Eólica del Sur wind park (AMDEE, 2012), where now investments have gone north to an 180MW wind park in Coahuila (Peñoles, 2014). Wind parks around La Ventosa are being used to power mining operations in the name of environmental sustainability. These wind parks are built on alliances between state, national and large-scale foreign capital (Borras *et al.*, 2012; Wolford *et al.*, 2013), while they also operate in collaboration with other industries that are justified with a green economic logic of ‘offsetting’ (Sullivan, 2009, 2013a, 2013b; Seagle, 2012).

Investments in wind energy to ‘offset’ environmental damage continue attempts at rebranding mining as ‘sustainable mining’ (Kirsch, 2010), a notion that has extended to contradictory notions of ‘green uranium’ (Sullivan, 2013b: 82). Wind turbines are now renewing environmental destruction associated with extraction and processing industries, propelling industrial growth forward with new possibilities of receiving ‘climate’ and ‘clean’ technology funds and loans. Wind energy is being used to advance, and not replace, ecologically destructive modes of production (Dunlap and Fairhead, 2014), giving the opposite impressions marketed to the public by wind companies and governments signing climate change legislation laws and creating climate funds. The green economy attempts to renew not only Wal-Mart’s, Grupo Mexico’s, and other corporate images

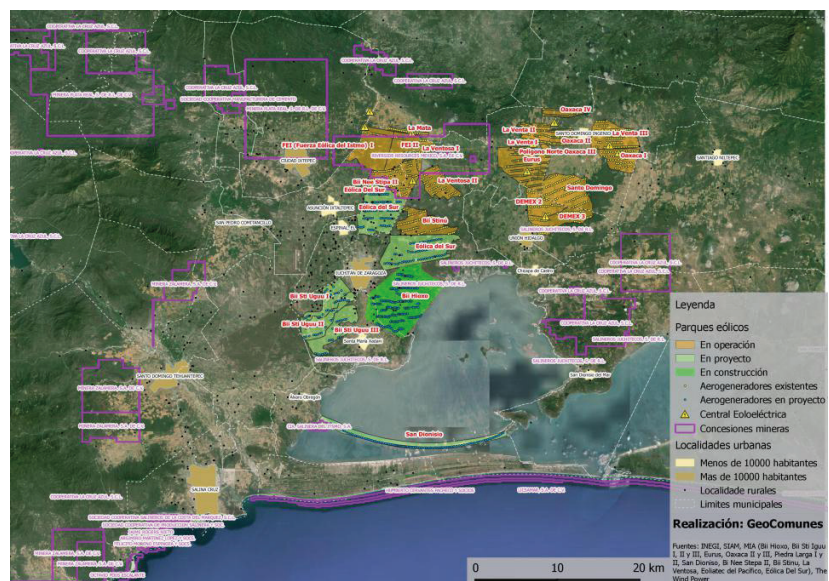


Fig. 2 Wind Parks and Mining Concessions, by Geocomunes, 2014





*Fig. 3 La Ventosa, Mexico by author*

as environmentally responsible, but also stimulate revenue streams, creating the possibility for continued economic and infrastructural expansion. This reality concerning wind energy is largely unacknowledged by environmental activists, NGOs (Sierraclub, n.d.; Greenpeace, 2015) and even some Indigenous land defenders (Richardson, 2016). Wind energy, and renewable energy in general, are positioned by public discourse as the solution to anthropogenic ecological and climate crisis, which is facilitated by a narrow concern and/or fixation with fossil fuels and the econometric counting/commodification of carbon. Let the case of wind energy development and use in La Ventosa cause reflection on the negative reality and processes enabled with renewable energy generation.

### **Wind Turbine Penetration in La Ventosa**

Towards the end of my first day conducting door-to-door interviews, my escort, friend and I dragged ourselves through the San Miguel neighbourhood of La Ventosa. Before heading back to the centre of town, we came across a vacant high-tension wire foundation. The town had already been engulfed by electrical infrastructure and wind turbines (Figure 3), but I was curious why the post remained incomplete. I asked

our escort what had happened? He explained that the government, without prior communication, began building power lines straight through the neighbourhood along the canal. Soon people started to ask the construction workers, 'what is that thing? What are you building?' The contractors told them: 'We are going to build power lines down here,' pointing across the neighbourhood. Immediately, the people started arguing, spreading the word, and came back to take over the construction equipment and cars belonging to the construction company, forcing them to stop working and eventually to discontinue the project. A line of concrete foundations was left behind (Figure 4). The people had stopped

the project. However, no official talked to them. The government did not consult them or consult anyone in that neighbourhood, let alone the town. The people learned by asking the workers. Through their own will, they terminated the construction. If people were not proactive, they would have never known about the intention to build high-tension wires, adding another layer of electrical infrastructure standing over them. Nevertheless, after hearing this story, and looking around me, standing in a neighbourhood at the centre of a wind energy generation site, it became clear that these high-tension wire foundations were a metaphor



*Fig. 4 High-tension wire foundation, La Ventosa Photo by Author*



for development in La Ventosa: the people are never fully informed, unless they find out and, if need be, stop it themselves. Otherwise the projects will proceed with minimal care. This section will investigate the governing relationship that allowed wind energy parks to engulf La Ventosa.

### *The Cacique: Land Control and Political Discontent*

Agrarian politics have always involved struggle in La Ventosa (Binford, 1985; Rubin, 1997). During interviews it was explained to me that in the 1970s, the current cacique in La Ventosa used state force to evict the leftist Isthmus Coalition of Workers, Peasants and Students (COCEI), activists protesting the privatization of communal land through squatting, which is now the land where the cacique lives.<sup>4</sup> The cacique is a powerful local autocratic political boss, who retains both local and national client networks of politicians, union leaders, business elites and gunmen, making them central figures in business in the town. Dona explained, '[t]he cacique has always had a lot of power, he had the PRI government with him and it is still like that [today].' The cacique, along with other PRI politicians, was instrumental in conditioning the direction of land change in La Ventosa. Between the 1960s and the 1990s, the town was agriculturally centred, specializing in sugar cane, cattle and dairy products (Binford, 1985). Agrarian changes came on the back of falling oil prices and the 1982 economic crash that opened Mexico to structural adjustment programs. Meanwhile, the COCEI won elections in Juchitán in 1981, were later they would be ousted, in 1983, by military occupation, with their political activities violently repressed by state and extra-judicial PRI forces. This led to cooperation with the PRI in regional elections in 1986 as well as with Salinas de Gortari's controversial visit to the Istmo in 1989, with the COCEI signing the *Pacto de Concertación Social* (Rubin, 1997), which for many signaled their institutional turn and betrayal of their radical roots. These macroeconomic, agrarian and political changes in La Ventosa set the stage for wind energy development. Neoliberalism spread as the COCEI cooperated

after the Pact, taking an ambiguous position towards Plan Puebla Panama (2001) and embraced corporate chains in Juchitán, such as Bodega Aurrera (Walmart), as well as the idea of transnational wind energy companies (Altamirano-Jiménez, 2014).

The Istmo in general and La Ventosa in particular, are governed by a *cacique*. Acting as a bridge, or intermediary, between the transnational companies and construction on the ground, the local cacique led the way for wind energy development in La Ventosa. 'He takes control over everything, he takes advantage of the situation before it is put into place,' explains Caballo who continues by recounting the arrival of the wind turbines:

He made an announcement at the beginning: "anyone who wants to sign a contract for a wind project," and he did not let them read the contract. About three hundred people came and signed, he said: 'Bring all of your paper work on your land,' but there were people there who broke-up that meeting, but he is the cacique who is always stealing from this town.

The role and collaboration of the cacique is fundamental to receive and facilitate the local politics of land control. Borrás *et al.*, (2012: 411) write: 'The key here is that capital is interested in taking hold of land resources in order to change the meaning and purpose of land use, and there is a wide range of possible mechanism to do this.' In La Ventosa the mechanism are long-term land leases for 30 years, which have three automatic renewals for 20-30 years. According to interviews, land was already concentrated into about thirty per cent of the town's population, causing the wind companies, outside the allotted social development funds to regional authorities, to largely disregard the rest of the population. Guarded by the cacique, these land deals were facilitated by another actor—the Coyote. One testimony, confirmed by others in the town, stated:

They did not start with a forum. First some people called Coyotes were brought in, they started talking to some people and

<sup>4</sup> This event was recounted in Rubin, 1997 and Howe and Boyer, 2015.

reserving the land [for wind companies]. They convinced the *comisariado*, they gave him money and then they began to say: “They are going to grow air, because here you cannot grow anything. So you will be harvesting and you will have money.” So they had isolated meetings called by the cacique or the *comisariado* and the authority never called a meeting. It was isolated. It was done house by house as fast as they could. They signed contracts that they [the companies] themselves drew up. That is how it went.

‘Coyotes’ are middle men from within or outside the Istmo who work to secure land for the wind companies. Coyotes acquire land at the best possible price. Another land owner working with the wind companies explains the situation: ‘whoever is well prepared will get a good price, but if you are a dumb ass, no. He has to negotiate. That is how he gets his share.’ The Coyotes methods further complicate the politics of green grabbing, creating new grey areas in land deals, a kind of ‘don’t ask, don’t tell’ in land acquisition. This officially provides the companies plausible deniability when land contract disputes surface. Coyotes were able to negotiate land deals using various deceptions: making false/exaggerated promises, exploiting illiteracy, indigenous language barriers, and ignorance, as well as using intimidation techniques (WDM, 2011; Simon, 2013; Juárez-Hernández and León, 2014). Nonetheless, the Coyote created further complications for wind companies. Describing the Coyotes as ‘very subtle’ in the way they acquired land, Dona explained what happened to her cousin:

[who] was told that she was going to get 20,000 pesos [1,188 USD] to attend some talks and sign a piece of paper and she said, “20,000 pesos, why are they going to give me that?” They were subtle, they went house by house, and they always worked individually — never collectively. They tried to take advantage the best they could. In fact it was commented in town that people were signing the agreements without the beneficiaries being listed there. So, the owner would sign

a contract for 30 years without the beneficiary being specified in the contract or an inheritor in case the owner died. [...] For example [...] this politician crosses the highway with a piece of paper in his hand and says to her [cousin]: “sign here, if you want to get 5,000 pesos from Iberdrola because she had a contract.” And she said, “Yeah that is fine.” She signed and the guy said, “I will be back in an hour to give you money.” The guy that took the paper to her is a lawyer and her cousin; she said it was the tenth of May. When she told me this, it was not a year later, the 8<sup>th</sup> of May and she had not received a peso.... so we went to see Juan Carrasco, representative of the wind company—the boss. Then we told the guy what had happened and he said, “No, it was not 5,000—it was 18,000 [pesos].” She said, “But I have not received a single peso.” He said, “Well, here is your signature.” And her signature was just three letters and the kid had falsified her signature. So that was theft.<sup>5</sup> [...] So yes, there were dirty dealings that other workers were making.

The wind companies deny working with Coyotes, instead calling them ‘political representatives.’ While this account likely has other versions, it demonstrates the added complications of foreign companies working with local collaborators. Notable, however, about this process is that unless you are a land owner, politician or political representative (Coyote) then you had little or no information about the construction of the wind turbines. Signing a wind contract created a situation where individual choice could have far reaching collective town-wide consequences.

Another lesser-known technique of acquiring land involves marrying into families. An acquaintance told me about this happening in Juchitán when I arrived in Oaxaca City, which also surfaced in La Ventosa as an increase in ‘fatherless children.’ As it was explained, lots of foreigners migrate to La Ventosa because of the proposed work on wind energy parks, then local ‘girls’ fall in love, ‘are seduced’ or have motives of their own

5 The two people protested until they got their money returned.

for entering into these relationships. This resulted in women marrying people associated with the wind energy companies and in La Ventosa, among other towns in the Istmo, these marriages have implications, providing access to land reserved only for people within the community. Discussing this point, a female civil servant tells me:

Yeah, in general we know it is an economic situation and the companies pay a lot of money, no? So if some foreigner is able to marry and become a part of some family, he has a communal right and they would continue on to become land owners. Yeah, we have a case like that, we have a case of someone who is not from here and they married a young lady and they have a residence, they bought a lot of land and he is an owner now—he already has the rights.

**AD:** Is this common? Is there more than one case?

Yes, there are several cases.

**AD:** Could you give me a rough estimation of how many cases there are?

We can say 5 or 8 eight per cent.

**AD:** Of people in the wind company or people in the town?

From the companies.

According to interviews this has created an abundance of single mothers in La Ventosa after wind company employees return home or travel to their next construction project. This type of in-and-out migration created by wind energy development had deeply personal and social consequences that interviewees blame on the cacique for his collaboration with the wind companies in general and poorly negotiating social benefits for the entire town.

The cacique is repeatedly presented as the puppet master behind the curtains. For example the lead

doctor in La Ventosa, where all the doctors in town report, is the nephew of the cacique. People suspect that this prevents the distribution of information concerning the negative health impacts arising from living in close proximity to wind turbines. Furthermore, the political arrangement in La Ventosa managed by the cacique is widely understood as corrupt. Someone explained:

By now people have become aware that all these politicians just want to get into power. The companies are paying money to the town hall for projects in the community, but many times the mayors will sometimes say: “We do not get anything from the companies,” but the reality is they are pocketing it all for themselves.

This perspective is taken further when talking about political parties in general. When asking a different land owner: ‘Do you think the cacique is making more money here than the COCEI?’ They replied: ‘It’s the same, they negotiate the same. They seem to be fighting, but no. They work together under the table. COCEI, the PRI, they are all together.’ This perspective was repeated innumerable times in interviews. Nonetheless, while it was noted that the COCEI ‘sold out,’ they appear to be fighting for electricity subsidies and unpaid taxes from the wind companies (Manzo, 2015)

In the last couple years, resistance in La Ventosa has reignited with a counter-town hall to resist the power of the cacique. This counter-political faction was able to prove, using photos and video, that the cacique and his people were engaging in voting fraud. Buying votes, it was explained, was made possible with support from the wind companies. They took this to the courts in Oaxaca City and Xalapa with little result. Nevertheless, they persisted with blockading the highway, occupying the city hall and protesting until Saúl Vicente, the Mayor of Juchitán, was recounted as saying: ‘You can continue going to war or I can offer you this tie so there can be peace,’ offering to split political control of the town into two factions—the cacique and counter-cacique.<sup>6</sup>

<sup>6</sup> Creating ‘parallel offices’ is a classic technique for resolving



On my first visit to La Ventosa, a local political candidate, giving me a tour of the placement and proximity of wind turbines from people's homes, on this trip, explained in an interview that the cacique 'is the one who rules the wind energy project and the people who raise their voices are intimidated by him, but we are not intimidated because we have courage to denounce it.' This faction is largely concerned with the failure of social development and benefit-sharing in the town. While many in the town criticize the counter-cacique faction for trying to get wind company money allotted to the town hall they still provided an important opening for this research. Simply put, there was another gang in town. While I believe there was a fair amount of self-censorship in a number of interviews and encounters as 'people are afraid to talk about the wind turbines because of the *cacique*' there was a space—an opening with (relative) protection so I could conduct census style interviews with people in and around both factions. This would allow me to learn about the faltering environmental and social experiences of living with wind energy in La Ventosa.

### Ecological and Health Effects

Environmental impacts vary depending on the project site. Considering the activism around fossil fuels and renewable energy, it must be pointed out that every aspect of a wind turbine is derived from fossil fuels. They are largely comprised of various types of steel, reinforced concrete foundations that consume 150 metric tons of steel for normal building conditions, 250 metric tons for the rotor hubs and nacelles and 500 metric tons for the towers (WSA, 2012). An average 2.5 megawatt wind turbine, some estimate, consumes 450 metric tons of steel (Smil, 2016). This also includes fiberglass blades and other petroleum products such as plastic components and casings, water proofing resins and oil to lubricate the blade and hydraulic system (Guezuraga *et al.*, 2013). All of these components require mining, oil extraction, processing, heavy machinery for installation and systematic maintenance, as well as transport. The dichotomy between fossil fuels and renewable energy,

while a qualitative difference exists, is also surreptitiously misleading.

Wind turbine installation and operation also cause a variety of ecological impacts. This includes the clearing of trees and habitat for roads, overhead and subterranean power lines, as well as the general need to prevent trees from interfering with the turbines (Bessi and Navarro, 2014). Similarly, wind turbine foundations are recorded in the area as damaging the water table, often resulting in extreme flooding and drying that has complicated farming and has led to water wells drying up (Dyer, 2009; Navarro and Bessi, 2015). The oil used to lubricate the propellers leaks in both old and new wind parks in the Istmo (Navarro and Bessi, 2015). One wind park employee in La Ventosa nonchalantly admits during an interview: 'Several of the turbines you can see have oil leaks. If you want to go out into the sun you could see several—30 or 40 per cent are leaking oil.' Oil then goes into the ground, into water wells and onto grass where humans, but more commonly cows, can consume it, which results in research participants reporting cow infertility and deaths in La Ventosa (see also Bessi and Navarro, 2015). Likewise, as is already well-known, wind parks damage bird and bat populations (Ledec *et al.*, 2011; Tabassum-Abbasi, *et al.*, 2014), which is combined with occasional accidents when wind turbines are overwhelmed by wind or struck by lightning that results in fire. Around La Ventosa there were four different cases of wind turbine fires that surfaced in interviews, one of which was close to town and reportedly made some children sick. The environmental impacts of the wind turbines increase when they are located next to water and sea life, which is not the case in La Ventosa.

Extensive health complaints also surfaced in La Ventosa. The findings in this research resonated with Piermont's (2009) *Wind Turbine Syndrome*, which in La Ventosa manifested in reports of noise annoyance, house vibration, headaches, anxiety, tinnitus, dizziness, insomnia and hyper-tension (Simon, 2013). The majority of the literature on wind turbine health impacts support these findings (Havas and Colling, 2011; Bakker, *et al.*, 2012; Farboud, *et al.*, 2013; Jeffery *et al.*, 2014; Tabassum-Abbasi, *et al.*, 2014; Evans, 2014), documenting physical and negative psycho-

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political conflict in Mexico (Rubin, 1997: 52)

social (or emotional) relationships to the political and economic processes behind wind energy development (Bakker *et al.*, 2012). Unexpectedly, cancer became a reoccurring issue with people during and after interviews. Notable was an unsettling interview where two police officers who stood by an open window during an interview with a doctor who explained ‘it is the majority’ of the town that has cancer. Undoubtedly cancer’s relationship to wind turbines remains undetermined and only one among many factors in the town, but the quantity of concerns about cancer in interviews in La Ventosa was alarming, requiring further attention and independent investigation from medical doctors<sup>7</sup> and anthropologists.

### **Land Change: Inequality, Rural Gentrification and Out-Migration**

The response of the majority of the people during interviews can be summarized as follows: ‘There are no real benefits’ for the town, only the land owners benefit from the wind projects. Out of sixty-three interviewees, forty-seven said there were no social benefits, while thirty-six said only the land owners benefited. ‘Social benefits’ refers to collective benefits achieved for the people as a whole—a community. It was not only the land owners who benefited, but also political authorities such as the cacique and his network of associates. There were at least twelve people who felt they were not affected by the wind turbines, viewing these projects as generally beneficial to the town even if these benefits were admittedly limited. The best explanation for selling land came from Elder Gato, who said: ‘It is hard to steal a wind turbine, but you can steal a cow.’ Elder Gato was among at least two other land owners who felt grateful for the wind companies, even if at moments during the interviews expressed anger at the wind company negotiation practices, profit sharing (compared with other countries) and a lack of information about the ecological impact of wind turbines.<sup>8</sup> These land owners felt the wind

companies provided new opportunities for the town, themselves and their families, allowing them to send their kids to university. The same narrative is articulated by Howe and Boyer’s (2015: 35-6) ‘Don Julio,’ but these findings of appreciation were immersed in discontent and at times expressions of powerlessness—‘they [the wind turbines] are already here, what are we going to do?’ Walking around the town, you can see from people’s houses and cars—American brand name SUVs and pickup trucks—who works with the wind companies, and who does not. Benefits from wind energy projects included: (temporary) work, (some) paved streets, a market centre, the house of culture, painting the schools and a soccer field. A mother told me that the wind companies helped low-income children with painting lessons, Zapotec language classes, and summer schools -- not to forget classes about wind energy in primary schools as well as technical courses at the University of the Istmo to train people in electrical engineering. However, many of these civil projects, I was told by the counter-cacique faction, were achieved through struggle and protest.

While benefits were real for land owners and political leaders, discontent with the wind energy projects seemed overwhelming. For example, regarding improvements to the schools it was explained:

When Iberdrola was about to enter a few years ago they said there would be social benefits. This is what the companies said, they were socially responsible, and it was even their slogan. So the first thing they said was that they were going to improve the school because the school is 40 years old and it expired 15 years ago and until now there is no progress. The only thing they did was brought two paint cans to the school and took a picture and they said, “We are supporting education.” They brought two footballs; took another picture and said, “We are supporting sports.” So there is no benefit for this town—there is none.

<sup>7</sup> This includes doctors specializing in Eastern or Chinese medicine that account for energy in the body. See Bessi and Navarro, 2014.

<sup>8</sup> This included a feeling of discrimination and racism, arising from negotiation practices, attitudes surrounding Zapotec

life and unequal benefit sharing. James Anaya’s (2015) observation of the FPIC procedures regarding the next wind park projects also commented on this.

Accounts like these were common. While some appreciated the 4-12 blocks of paved roads in the town, other felt this was an utter joke—‘[S]o the streets were paved, but the only people who benefited are those with land.’ Frustrated, Dona points out that the running water ‘is not drinkable and they put some pavement on the streets, but they did not take care of the sewers and the water, they just did things to make the town look pretty. At a certain point this hurts us.’ Considering the scale of the project, the money involved and people’s quality of life, they felt it was a change for the worst. At the end of an interview a woman summarized: ‘We are still poor and now we are surrounded by wind turbines.’

### *Temporary Work*

The work provided by wind companies was met with similar attitudes. Those seeking wind park jobs were in competition with migrant labourers and other specialists who came from overseas to work on the wind projects. Work was limited in duration, quantity and went to foreigners because of their technical expertise (Simon, 2013). Time and again, people stressed: ‘They promised work, but nothing—it is worse than before’. The jobs available for locals were temporary, anywhere from three months to a year and a half. Getting work also depended on people’s relationship with the cacique and his union networks. Repeatedly, I was told that jobs became a way of buying votes and silencing people. Likewise the idea that ‘[i]f you want to keep your job, you have to do everything the company says.’ People are even paid, according to interviews, 200 pesos to agitate and intimidate people critical wind energy at the recent free, prior and informed consent (FPIC) consultation that began in Juchitán on November 2014.<sup>9</sup>

### *Electricity*

Dissatisfaction with work was combined with rising electricity prices. Because of land

use changes for wind turbine construction, La Ventosa is now considered an industrial town, which means they lose state subsidies and pay industrial prices for electricity regardless of living within the power plant itself. One man asks: ‘How is it possible that they consider us an industrial zone because our region is producing energy they are taking to other countries?’ Thirty-seven of sixty-three people interviewed were completely infuriated by rising electricity bills. ‘I feel that we should not have to pay electricity bills in this town because we are surrounded by these wind turbines,’ says a mother (Figure 5). While another person explains:

Every two months the electric bill goes up higher. So when the bill comes in at 800 or 1,000 pesos the farmer does not have enough to pay for that bill. So then the CFE comes and cuts off your power because you have not paid. Poor people. If it was generating electricity our families should be doing well, we should be able to enjoy that, but rather there is no benefit.

A small sandwich shop owner said they pay 3,000 pesos every two months, which are big jumps in electricity bills that risks putting them out of business. Another person contends they are paying 1,000 to



*Fig. 5 La Ventosa, Photo by Author*

<sup>9</sup> See Friede and Lehmann, 2016 and Dunlap, Forthcoming for more back ground on the FPIC consultation.



1,200 pesos every two months for electricity in their home, a pressure that is justified with the change in soil use for wind turbines. Even during an interview, I watched in the background as a CFE employee get out of a truck, knocked on the neighbour's door, afterwards walking around the property, which I would assume is them shutting off the electricity. Then during another interview down the street thirty-five minutes later, the CFE are still driving around going house-to-house and a woman yells: 'We want light! We want light!' The situation appears disheartening. Enclosed by wind turbines, the electricity prices for residents are sky rocketing with residents telling me that ninety per cent of the jobs made available by wind companies have left the town. La Ventosa, like other rural towns in Mexico, already had difficulties with political corruption, poverty and income-generation, but the arrival of wind energy development began instigating a type of rural gentrification in the town.

### *Rural Gentrification*

Two decades and more ago, Martin Philips (1993: 138) argued that 'rural studies would appear to lag behind urban studies in recognizing the diversity of ways one can interpret and understand gentrification.' More recently, Darren Smith (2011: 599) affirms this, stressing the increasing resonance of gentrification in rural studies. Arising from public regulation and private investment, gentrification is a dynamic economic process of urban revaluation that creates price hikes on space, and by extension property, in targeted areas (Lees *et al.*, 2008). Smith (2002: 390) makes a call to 'widen the spatial lens' of gentrification studies, while Davidson and Lees (2005:1170) define four foundational characteristics of gentrification: (1) reinvestment of capital, (2) social upgrading with in-migration of high-income groups, (3) landscape changes and (4) direct or indirect displacements. While characteristics of rural gentrification have already been demonstrated with large-scale capital investment, exclusionary land leasing practices, in-migration of high-income groups (employees)<sup>10</sup> and rises in electricity prices, wind turbine development

has given rise to a new geography of rural gentrification.

Wind turbines have driven up land and rent prices. A civil servant explains:

When the companies first came they arranged a rental contract and they came to look at the lands and they put in a clause that when the owners were ready to sell, they would have to sell to the companies. Then all of the prices went up more than 200 per cent, the price of land then was 4,000, 5000 pesos. Now it costs more than 50,000, 60,000 pesos [per square hectare].

Talking about the change in rent for an average dwelling, an *ejidatario* says, '[i]f the rent before was 300 pesos, it is now 3,000 or 4,000 pesos—that is too much.' This influx of people coming to plan and execute these wind projects, which was significant for the size of La Ventosa, had varying effects. The arrival of more people and money triggered a moto-taxi rush, with around 200 people buying moto-taxis, which now sit in people's houses after wind park construction ended. 'The companies use to pay more than what the people are used to here, but it had consequences, because once the wind energy companies left, everyone wanted to charge the same amount [of money] to everyone,' explained a moto-taxi driver. This trend subtly influenced restaurants to accommodate foreigners and to take advantage of the new money in town. Discussing cultural change, a human rights defender in Tehuantepec points out: 'If you go to La Ventosa, there is a restaurant there and it used to be you could eat garnachas there, cocada, torta, coffee, but not anymore, now it is all gringo food. Light skinned people like you, more or less, go there and they have their menu there.' While this change might be welcomed by some, to others it signifies a subtle colonial erasure. This is compounded by changes in quality of food. Emerging from a discussing about the 'sickness' in the town one woman explains:

We think it is something coming from the food. Actually before we did not eat this kind of chicken, we ate chickens that were raised.

<sup>10</sup> Most people migrating from Northern or Developed countries with wind companies jobs will resemble a high-income group.

The pigs are the ones now that just eat [industrial] feed and before that was not the case. Before we just ate animals that were roaming around, eating whatever they could find, like corn [stalks]. Now they are just purely eating feed made of chemicals and now people are getting sick—a lot.

The shift from farming to ‘wind harvesting’ has had significant ripple effects, leading people to import food, slowly integrating people into food logistics that comes with new costs (Figure 6). ‘Every day the price of meat gets higher,’ a woman complains, telling me that it is over 140 pesos a kilo. This impact was multiplied by other significant cultural changes with the arrival of new people, habits and out-migration in search of work.



**Fig. 6** Mural in Juchitán: ‘Autonomy and freedom of expression—My totopo will not have genetic modifications—cacique oppress you—Political parties divide you—Enterprises invade us.’ Photo by Author

### *Crime and Drug Consumption*

‘[S]ince the arrival’ of wind energy projects, says a young women, ‘the problems that were already here started to grow with increases in drugs, in rent and food [prices].’ Crime and drugs grew with the arrival of the wind energy parks. Explaining the rise in crime in the town, people continually blamed it on ‘outsiders’ or ‘foreigners’ who think La Ventosa is rich because of the wind parks. ‘Because there are a lot people who

have wind turbines on their land and they have higher earnings, there have been more robberies, assaults and people have broken into houses,’ explains a women, continuing: ‘So there are a lot of people coming from the outside, so since this town is so small we all knew each other, but not anymore.’ Twenty-two of sixty-three people see a rise in crime, while thirty felt there was a rise in drug consumption. A civil servant explains how this became a serious issue for the town:

It was about three years ago, when the high-school, the teachers, the workers and the staff of about 30 workers and three-hundred students demonstrated and went on strike and closed down the road. Because of drug consumption, the population was living in a situation of insecurity. Young people from outside the community, but from the region, were coming and selling drugs, selling coke [cocaine]. So we demonstrated before the government so [...] they would give us more security. And that these young people that would come and distribute drugs would retire and go away because they were practically poisoning our students.

I followed up by asking if this rise in drug use had ‘some relationship with the wind companies?’ The civil servant replied: ‘Probably, yes. Because before there was delinquency, yes, but not so much like when the foreigners arrived.’ Stories kept emerging, specifically in interviews with mothers, about how they watched young people intermingle with wind company workers, who provided a gateway into drug use. Summarizing the situation, Aguila said: ‘The Jobs leave, but the drugs stay.’ The FDI and wind energy development created not only a direct rise in housing, electricity and food, but might support a micro version of Paley’s (2014) *Drug War Capitalism* theory—where economic growth correlates with drug consumption and production. Meanwhile, drug cartel related violence increased in the Istmo against the back drop of wind energy development and resistance.<sup>11</sup>

<sup>11</sup> This raises further questions in this region regarding

### *Out-Migration*

Wind energy development triggered a duel process of revitalization for some, and ghettoization for the majority, intensifying pre-existing negative relationships and patterns within the town. This gets expressed in increased out-migration. The dramatic rise in prices, as well as the psychological and physical discomfort from living surrounded by wind parks, has intensified a poverty trap, resulting in indirect displacement related to land change. Summarizing the situation a pastor explains:

People complain because they cannot work the land like they use to, even though they were given money for the renting of the space, but they cannot work in agriculture. There is no more corn, beans, or watermelon. The ranchers are trying to make the best out of the little bit of grazing land they have, but there is no more production in agriculture.

This recent change from agriculture and livestock to wind energy appears to be slowly establishing dependency on the importation of food from industrial sources, which reflect larger macro-economic trends in Mexico and insecurities associated with dissolving small-holder agriculture (Bello, 2009; Schutter, 2011; White *et al.*, 2012; Wolford *et al.*, 2013). This has widened the income-inequality gap in La Ventosa, allowing a kind of rural gentrification to flourish and encouraging existing out-migration for work. A man elucidates:

Yeah, much less work—less work. That is when people will start to migrate as far as the United States where people normally migrate to or maybe to other states or simply they will stay with the possibility of living day by day. For this reason it hurt their children in the educational field, they will not be able to continue their study because of the lack of resources.

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Paley's (2014) Theory of Drug War Capitalism documenting how cartel violence terrorizes rebellious areas, which is used as a justification for the military to invade and further terrorize activists fighting development projects.

**AD:** Do you see this starting to happen now?

Yes. Yes, I have a lot of friends who do not study anymore because their parents have ended up without work and they have migrated to other states and started working and plumbing in bathrooms and as low-paid workers in tourist zones where there is a little more work.

While these trends -- land change, rural gentrification and out-migration -- are already taking place, it is thought they will worsen in the near future. The extent of out-migration requires further investigation, but what is for sure is that the land owners and elites benefit, while others feel they 'are still poor and now we are surrounded by wind turbines.' Wind energy development results in a series of dependencies, notably on the construction of more wind energy projects for the landless workers (Borras, *et al.*, 2012), pitting them against their neighbouring coastal communities who not only survive from farming, fishing and selective engagements with the economy, but have taken up an insurrectionary stance against wind energy development on the Laguna. Wind energy projects have far reaching social and environmental impacts draped in public relations, market opportunities and the hopes that they will mitigate ecological catastrophe that appears at worst unfounded or at best limited in La Ventosa.

### **Conclusion: Greening Inequality**

The case of La Ventosa demonstrates two substantial impacts at the local level. La Ventosa exhibits typical outcomes associated with ecological distribution conflicts, such as local power inequalities, unequal distribution of benefits, and negative environmental impacts, but these features are exaggerated in culturally and context-specific ways, specifically with local political, agricultural and migration patterns. These features combine with the proximity of wind turbines to homes in La Ventosa, which appears particularly problematic and unique, not only in terms of the discomfort to local people living close by, but also with



the enclosure of the town that creates resource scarcity and triggers a type of rural gentrification. Wind energy in La Ventosa in construction, operation, and energy use, under the self-supply clause, becomes a step in the direction of privatization, commodification and grabbing of wind resources. Similarly, wind energy initiatives are promoting the spread of electrical, road, and concrete infrastructures to propel in this case transnational superstore chains, food processing corporations and mining companies – now Walmart owns the wind. This is justified globally as the ‘higher good’ to promote climate change mitigation, ecological sustainability and economic growth. Investor companies continue to actively extract and process natural resources, which now extend to harnessing wind resources to process and sell plastics products, junk food, process steel and produce concrete for industrialized consumption and development. Meanwhile locally, industrial expansion in the name of mitigating anthropogenic climate change, serves as an economic stimulus in rural economies, but results in a type of rural gentrification that concentrates power, intensifies poverty and invites social immiseration.

La Ventosa shows the complications associated with green grabbing that resonates with Borras *et al.*, (2012) and Holmes (2014) who expand the definition of land/green grabbing and how these types of land acquisitions can happen through complicated and often sublet procedures, such as Coyotes, who are strategic in the way they approach people to broker and consolidate land deals for their employers, but also themselves. The source of complications with green grabbing is the hope these projects generate. ‘Infrastructures’, Harvey and Knox (2012: 534) write, ‘can dazzle with the possibilities they hold—glitter of progress, the lure of profit, the promise of circulation, movement and a better life.’ These hopes for an economically prosperous and more ecologically sound life, in the case of wind energy in La Ventosa, captivates the imaginations and desires of people both locally and abroad. However, local participation and benefit sharing is limited, where community wind

park development would undoubtedly be preferable for local residents in La Ventosa (Oceransky, 2011). Meanwhile industrial-scale wind energy further entrenches the current trajectory of resource privatization, exploitation and industrial progress, and their consequent social and ecological consequences. The green economy now emerges as a symbol in the advancement of environmental degradation and political control, rather than the reverse.

Discussing the principle of ‘lesser evil’ deployed by states in war, Eyal Weizman (2011: 10) writes, ‘less brutal measures are also those that may be more easily naturalized, accepted and tolerated – and hence more frequently used, with the result that a greater evil may be reached cumulatively.’ The green economy is the lesser industrial evil, utilizing discursive technique of war to continue the proliferation of industrial waste in the name of climate change mitigation. This results in greater cumulative social and ecosystem alterations that edge toward destruction. The fruits of modernity continue to bloom as the mechanical flowers propel further the proliferation of industrialization, impoverishment and selective prosperity, suppressing not only the people resisting this trajectory, but also the alternatives to, and appropriations of, industrial development so humans can live dignified, just lives and move towards more ecologically harmonious existence.



Fig. 7 Downtown La Ventosa. Photo by Author

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